Multi-Media Compliance Evaluation Inspection
United States Environmental Protection Agency, Region III
Office of Enforcement, Compliance, and Environmental Justice
1650 Arch Street
Philadelphia, PA 19103-2029

Naval Support Facility Indian Head
3767 Strauss Avenue, Suite 113
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Inspection Dates: September 11-15, 2017

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Background

A multi-media inspection (the Inspection) of Naval Support Facility Indian Head (NSFIH) Mainside (the Facility) was conducted on September 11-15, 2017, by the Environmental Protection Agency (EPA's) Region III's Federal Facility Program housed in the Office of Enforcement, Compliance and Environmental Justice (OECEJ). The Stump Neck facility was not included in the scope of the Inspection This office conducts a number of multi-media compliance inspections each year at Federal Facilities located in Region III.

The objective of this Inspection was to obtain a snap shot of the Facility's overall compliance regarding below-mentioned environmental regulations.

- Clean Air Act (CAA) - This aspect of the Inspection focused on the Facility's Title V permit(s), stationary air emissions sources, and ozone depleting substances (ODSs).

- Resource Conservation and Recovery Act (RCRA) - This aspect of the Inspection focused on underground storage tanks (RCRA-I).

- Resource Conservation and Recovery Act (RCRA) - This aspect of the Inspection focused on the hazardous waste (RCRA-C).

- Clean Water Act (CWA) - This aspect of the Inspection focused on the National Pollutant Discharge Elimination System (NPDES) permits for point source and industrial storm water discharges, and the requirements for a Spill Prevention Control and Countermeasures (SPCC) Plan.

Please also note that not all of the photographs taken during this Inspection are included within this report; however, all photographs are maintained by EPA as part of the files for this matter.

Opening Conference

The EPA inspection team arrived at the Facility on September 11, 2017, and met with Facility representatives. The EPA Inspectors conducted an opening conference with the Facility management along with representatives from programs throughout the Facility. At this time, the EPA Inspectors presented their credentials to the Facility representatives, as authorized representatives of the agency. The EPA inspection team lead inspector provided an explanation for the reason and overview for the scope of the inspection to the Facility personnel. The team lead inspector also let the Facility know that a close out conference would be conducted at the end of the inspection, to discuss any findings and or concerns found during the Inspection. The Facility then proceeded to give the EPA Inspectors an overview of the Facility operations and programs.

Facility Description

The Facility is located in Indian Head, Maryland and it is own and operated by the United States Navy. The Facility has been in operation since 1890. A total of ten commands are supported within the Facility. The supported commands include NAVSEA, NSWCINDIV, SEALOG, EODTECHDIV, NOSSA, NDW, NAVFAC, CBRIF, JITC, and BUMED. The mission of the Facility is to provide technical capabilities necessary to rapidly transition any energetics product from concept through production, to operational deployment. The Facility capabilities include energetics research, development, modeling and simulation, engineering, manufacturing technology, production, test and evaluation and fleet/operations support. The Facility also has the capability of (b) (7)(E)

The Facility also includes a multifaceted casting and loading plant, an extrusion plant with finishing facilities, and manufacturing facilities for (b) (7)(E) . The Facility also produces (b) (7)(E) . The Facility encompasses approximately (b) (7)(E) acres with over a thousand buildings covering (b) (7)(E) thousand square feet. There are approximately (b) (7)(E) personnel onsite, that include contractors. The Facility's general operating hours are 7:00 to 5:00 p.m., Monday through Friday.

Technical Reports

Clean Air Act

This portion of the Inspection was conducted by Michael Prescott, Environmental Engineer and EPA Contractor Inspector and Mike Eller, Physical Scientist and EPA Region III inspector.

Facility Regulatory Status

This section of the Inspection report addresses the evaluation of compliance with the Clean Air Act (CAA) related to stationary air emissions sources and Ozone Depleting Substances (ODSs). (b) (6), Air Program Manager and (b) (6), Assistant Compliance Manager were the primary contacts for the Facility for the CAA Full Compliance Evaluation (FCE).

According to the Maryland Department of the Environment (MDE) Operating Permit Fact Sheet, The Facility is a Major facility under the CAA for air emissions of NOx and SOx, but not for Hazardous Air Pollutants (HAPs) since the Goddard Coal Plant was shut down in September 2015. In addition, the Operating Permit limits Volatile Organic Compounds (VOCs) from the Nodal Energy Production System (NES) Plant (which replaced the Goddard Plant) to a maximum of 25 tons per year (tpy) to prevent VOCs emissions 'from triggering a "Significant" net increase for the facility and the Nonattainment Provisions for Major New Sources and Modifications (NSR).' The Title V Operating Permit No. 24-017-0040 issued to the Facility by MDE had an effective date of 8/1/16 and has an expiration date of 4/30/21.

Some of the air emissions sources regulated under the Operating Permit also appear to be subject to Federal CAA New Source Performance Standards (NSPSs) and National Emissions Standards for Hazardous Air Pollutants (NESHAPs) including:

- 40 Code of Federal Regulations (CFR) Part 60 Subpart Dc Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units;
- 40 CFR Part 60 Subpart IIII Standards of Performance for Stationary Compression Ignition Internal Combustion Engines;
- 40 CFR Part 60 Subpart KKKK Standards of Performance for Stationary Combustion Turbines;
- 40 CFR Part 63 Subpart ZZZZ National Emission Standards for Reciprocating Internal Combustion Engines;
- 40 CFR Part 63 Subpart JJJJJJ National Emission Standards for Industrial, Commercial, and Institutional Boilers at Area Sources; and
- 40 CFR Part 63 Subpart GG National Emission Standards for Aerospace Manufacturing and Rework Facilities at Area Sources (aka Aerospace NESHAP).

(b) (6) reported most of the boilers on the Facility are gas fired only and two oil fired boilers (b) (7)(E) were the only boilers subject to the 40 CFR Part 63 Subpart JJJJJJ NESHAP for Industrial, Commercial, and Institutional Boilers at Area Sources. The facility also has numerous air conditioning and refrigeration (ACR) units containing ODSs that are regulated under Title VI of the CAA. In addition, the Facility conducts open burning of explosives and propellants at the Facility.

The Enforcement & Compliance History Online (ECHO) facility report for the Facility shows that the CAA Risk Management Program (RMP) applicability is "Inactive". (b) (6) indicated no one had evaluated the Facility recently to check for the applicability for RMP, but he believed the facility was still no longer subject to the requirements since they changed operations to stop storing (b) (7) in December 2007. (b) (6) provided a copy of a letter sent to the EPA RMP Reporting Center on 1/16/08, that reported this change **(See Attachment CAA 1 for a copy of this letter)**. Mr. Prescott reviewed the 2016 Maryland Tier II Emergency Planning and Community Right-to-Know Act (EPCRA) Emergency and Hazardous Chemical Inventory Report prepared by (b) (6) to identify if any CAA 112r listed chemicals were stored in quantities greater than the thresholds requiring a RMP. Mr. Prescott did not identify any such chemicals above the applicable thresholds in the Report.

Mr. Prescott also interviewed (b) (6) and the Air Conditioning (AC) Supervisor to determine if ammonia was used for refrigeration and in what quantities it was present and these representatives reported ammonia was not used for refrigeration. Finally, the Region III Clean Water Act inspector, Garth Connor, reported the disinfection method used for the onsite Wastewater Treatment Plant (WWTP) was ultraviolet light and (b) (6), the Facility Water Manager, indicated a liquid chlorine solution was used at the Water Treatment Plant (WTP) which is not on the CAA 112r RMP list.

According to ECHO, the Facility has been inspected by MDE about every two years and the most recent CAA FCEs at the Facility were conducted on 7/25/17 and 10/15/14 and a Partial Compliance Evaluation (PCE) was conducted on 2/12/16. According to John Artes (the MDE inspector for the recent inspections), the last inspection on 7/25/17 identified numerous deviations that had been reported by the Facility in the 2016 Compliance Certification Reports submitted to MDE. A summary of these deviations is provided in **Attachment CAA 2**. Mr. Artes also reported a Consent Order was issued by MDE in July 2012, for the CAA violations from the Goddard Coal Plant which led to shutting down of the Plant on 9/4/15, but no penalties were assessed for the violations. A letter from MDE to the Facility, dated 4/20/16, terminated this Consent Order.

Facility Description

The Facility is subject to the CAA due to its emissions of air pollutants from numerous boilers (including about 13 boilers that are rated greater than 10 million British Thermal Units per hour (MMBTU/hour)), a Combustion Turbine Generator (CTG, rated at 4.5 MW), several emergency generators (EGs), various explosives, propellants, weapons, and aircraft parts manufacturing

processes, paint spray and other coatings application booths, spray gun cleaning and parts washer units, an Industrial Waste Processor (IWP), and other emissions sources. In addition, the facility has numerous ACR units containing ODSs that are maintained by facility employees and contractors. According to (b) (6), there were no new air emission sources that had begun operation that are not permitted, covered under a Permit to Construct, or for which a permit application has not been submitted to MDE.

Scope of the Inspection

Mr. Prescott and Mr. Eller (EPA CAA Inspectors) conducted the CAA FCE of the facility on September 11 - 15, 2017, and (b) (6) and (b) (6) escorted the EPA CAA Inspectors and provided information and records during and after the Inspection. Photographs were taken in chronological order (the photographs were taken by facility personnel due to mandatory security restrictions required by the facility).

Numerous buildings and outdoor areas with one or more air emissions sources were inspected for compliance with applicable regulations and the Operating Permit. These buildings and areas, and related observations and issues are presented below according to the chronological order they were visited (the date each building or area was inspected is noted after the title). The information provided in this report are based on interviews with facility personnel and physical observations made by the EPA CAA Inspectors. (b) (7)(E) was undergoing renovations to change the processes used and was not operating.

This FCE also included a review of the facility's records and reports including Annual and Semi-Annual Reports, the Operating Permit Application, correspondence with MDE, fuel usage records, operating logs, operating and maintenance procedures and records, paint spray booth operating records, paint and other hazardous material usage and emissions records, Safety Data Sheets (SDSs), ACR unit service records, ACR technician training certifications, and other documents and records. The full list of records reviewed and additional observations are included in the last subsection of this CAA evaluation section.

Inspection Observations

Boiler Operations (b) (7)(E) *- 9/12/17*

The inspectors first visited the Boiler Operations Building which housed the control room for 18 boilers and the CTG as well as the supervisor and staff that operate and maintain these units. According to (b) (6) and (b) (6), General Foreman, the NES boilers and CTG were only supposed to fire natural gas except during natural gas supply disruptions and curtailments. Section IV.1.1.D of the Operating Permit requires the CTG to fire only natural gas as the primary fuel and distillate fuel oil as a backup stand-by fuel. However, the CTG burned fuel oil as well as natural gas from the start of operations in September 2015 due to problems with the natural gas compressor (fuel oil was burned about 75% of the time during this period, per (b) (6)). **Attachment CAA 3A/B** shows the fuel usage for the CTG and boilers for 2016 - 2017 and shows 2,093,787 gallons of fuel oil were burned by the CTG in 2016 from March through

December and 445,330 gallons were burned by the CTG in 2017 through August. Furthermore, these quantities do not include the months between when the NES Plant came online in September 2015 to March 2016, because the Plant was not fully equipped with the necessary meters to take fuel oil usage readings, per (b) (6).

On 9/20/16, the Facility sent MDE a letter asking for an emergency determination that the natural gas compressor problems were an allowable reason for the Facility to run the CTG on fuel oil. MDE responded on 12/30/16 that the compressor problems were not an allowable reason to run the CTG on fuel oil. The Navy then responded on 3/23/17 with a letter discussing the plans for the CTG going forward (these three documents are included in **Attachment CAA 4**). According to (b) (6), the Navy has been negotiating with the installation contractor to replace the compressor after various efforts to fix it have failed, but this will likely take another year to complete.

(b) (6) reported there were no problems with any of the other boilers and they were available to be operated 24/7, as needed. (b) (6) reported that boiler operators conducted daily observations of the exhaust stacks for visible emissions and no visible emissions had been reported. Review of samplings of log entries for these observations by the inspectors did not identify any records that indicated visible emissions were observed.

According to (b) (6), all of the operators of the boilers and CTG attended the various training courses required by the Operating Permit. Certificates for many of the training classes the boiler operators had attended were provided to the inspectors.

Bldg. (b) (7) NES Strauss Plant, Bldg. (b) (7) Johnston Boiler, and Bldg. (b) (7) SNP 6 Boiler - 9/12/17

The inspectors next visited Bldg. (b) (7) which housed the NES CTG, the Heat Recovery Steam Generator (HRSG), and another boiler. The inspectors observed the stack emissions from the HRSG, which was the only unit operating in this building, and did not observe any visible emissions (note these were not EPA approved method observations) **(See Photograph CAA 1 for a view of the stack)**. The inspectors also observed the outside of Bldg. (b) (7) **(See Photograph CAA 2)** which housed the CTG compressor that had the problems causing the related deviations reported by the Facility. The inspectors then went inside Bldg. (b) (7) and saw the CTG and HRSG, but did not identify any concerns **(See Photograph CAA 3)**.

The inspectors then went to Bldg. (b) (7) which housed the Steam B Boiler. At the time of the inspection, this boiler was not operating and the inspectors observed the unit was open due to maintenance **(See Photograph CAA 4)**.

The inspectors then visited Bldg. (b) (7) which housed the two SNP 6 Boilers. At the time of the inspection, one of these boilers was operating and the inspectors observed the stack emissions which did not show any visible emissions (note these were not EPA approved method observations) **(See Photograph CAA 5)**.

Old Goddard Coal Plant and Coal Pile Area - 9/12/17

The EPA inspectors then drove by where the Goddard Coal Plant had been located and it had been demolished on 10/23/15, per (b) (6). The inspectors also observed the old coal pile area where the useable coal had been removed and only coal residues were left **(See Photograph CAA 6)**.

Strauss Ave. Thermal Treatment Open Burn Point - 9/13/17

The next day, the CAA inspectors joined other inspectors from the EPA and MDE to visit the Strauss Ave. Thermal Treatment Open Burn Point where waste explosives and propellants were burned in metal pans and tanks. **Photograph CAA 7** shows an overview of the site which is on a very low elevation peninsula that juts out into the Mattawoman Creek next to the Potomac River. **Photographs CAA 8 to CAA 10** show some of the igniter tanks and metal pans used for burning the wastes.

(b) (6), Technical Point Manager, escorted the inspectors and explained that the wastes were put in the uncovered pans and burned for about 12 hours. Liquid fuel, and occasionally solvents that have been contaminated, were used to burn the wastes. The covers were then put back on the pans to prevent runoff. No wastes were burned the day of the visit to this area, but a burn was conducted on 9/14/17 with the RCRA hazardous waste inspectors present **(See Photographs CAA 16 and CAA 17, which show two views of the burns and the resulting air emissions, as seen on a video camera screen)**.

(b) (6) reported about 189,000 pounds of explosive and propellant wastes were burned in 2016. The air emissions from open burning of explosive and propellant wastes result in visible emissions, including orange and brown plumes. Furthermore, these emissions also release lead in the air, per a verbal statement by (b) (6), Interim Acting RCRA Coordinator.

The Facility does not have specific emissions data for the open burning occurring at this facility. However, data collected by the Dept. of Defense and EPA for other sites where similar open burning has occurred has reportedly been prepared (per (b) (6)). At the time of this report the EPA inspectors were unable to review the data.

Despite the large quantity of wastes burned and the resulting potential toxic air emissions, this open burning has been listed in past permit applications and in the Operating Permit as an insignificant activity. (b) (6) reported that MDE wrote in a letter dated 9/16/98 that the "open burn/detonation area does not require registration" (a copy of the letter is provided in **Attachment CAA 5**). This determination by MDE was based on information provided by the Navy. Since the MDE letter was issued, the open/burning has been considered an insignificant activity. Sections III.2 and V.20 of the Operating Permit and Code of Maryland Regulations (COMAR) 26.11.02.10.X prohibit Open Burning and specify what activities and "de minimus" levels are considered to be insignificant activities.

Bldg. [redacted] Paint Booth Operations - 9/13/17

The inspectors visited Bldg. [redacted], escorted by [redacted]. Building [redacted] is a paint shop for both Aerospace and non-Aerospace parts. Bldg. [redacted]'s paint booths are an "existing source" for the purposes of compliance with the Federal emissions requirements. The inspectors observed paint booths in operation at the time of the inspection and observed the record keeping in the coating operations log **(See Attachment CAA 10)**. The inspectors observed that the odor of VOCs was detectable by smell outside the paint booths.

The inspectors interviewed [redacted], Explosive Operator, as well as [redacted], Environmental Protection Specialist for the Facility. Mr. Eller asked [redacted] to give a brief description of the type of painting work done in Building [redacted]. [redacted] explained that, at the time of the inspection, Bldg. [redacted] employees were painting [redacted] shipping containers for rocket motors. The shipping containers themselves do not meet the definition of an Aerospace part in the Aerospace NESHAP at 40 CFR 63 Subpart GG.

According to [redacted], and information shown on the coating operations log, Facility employees apply approximately 3 to 5 gallons per paint job of a coating known as Grey Silicone Enamel # 26307, product code N-5120, manufactured by NCP Coatings **(see Attachment CAA 11)**. The manufacturer's SDS indicates this coating contains 2.69 lbs./gallon (0.323 kg/L) of VOCs. Additionally, [redacted] stated that Facility employees mix in a small amount (approximately 28 fluid ounces) of a paint thinner, MIL-T-81772B Type II Ordnance Epoxy Reducer/Thinner, manufactured by the Sherwin-Williams Co. **(See Attachment CAA 12)**. The manufacturer's SDS indicates the thinner contains 6.98 lbs./gallon (0.837 kg/L) of VOCs. The combined Grey Silicone Enamel and thinner coating is then applied to the [redacted] shipping containers with a Brinks model 6X00 High-Volume Low-Pressure paint spray gun, operating at approximately 30 psi, inside an enclosed paint booth. The coating is air dried.

[redacted] stated that Facility employees monitor a manometer in the paint booth for a minimum pressure differential across an A-3000 bag filter of 0.2 psi or greater. If the pressure differential drops below 0.2, the filter is changed. [redacted] provided documentation of the manometer log **(See Attachment CAA 13)**.

According to [redacted], Facility employees clean the paint spray guns by hand using approximately 4 fluid ounces of the thinner in a metal bucket. Rags are then put in the metal bucket to absorb the waste thinner and then allowed to dry in the paint booth without the fan on to evaporate the waste thinner off the rags. The dry rags are then put in the trash. In addition, the Facility reported in their Permit Application submitted in April 2014 that paint gun cleaning units were used in Bldg. [redacted] and other buildings. A paint gun cleaning unit has not been used since April 2012.

The inspectors had the following observations with respect to the requirements of sections 7.0 through 7.5 of the Facility's Operating Permit, which covers the Maryland metal parts coating regulations and the Federal Aerospace NESHAP:

1. The Maryland regulations on the application of coatings to non-Aerospace metal parts (such as the (b) (7) shipping containers observed during the inspection), incorporated into the Operating Permit in section 7.1, state that the mass of VOCs per volume of coating, excluding water and exempt compounds, as applied, must not exceed 0.340 kg/L for general coatings (such as the Gray Silicone Enamel). The inspectors noted that it appears the practice of mixing in the thinner with the Gray Silicone Enamel means the coating, *as applied,* exceeds the VOC emission standard in section 7.1 (1)D of the operating permit.

2. The inspectors observed that the coating operations log for Building (b) (7), during the inspection, had a check mark in lieu of a number in the column titled "Total VOC "as applied"" (lb/gal or grams/liter) **(See Attachment CAA 10)**. It was unclear to the inspectors if Building (b) (7) employees are accounting for concentrations of VOCs as applied.

3. The Maryland regulations on the cleaning of spray guns, incorporated into the Operating Permit in Section 7.1(2)(c)(5), state that the Facility must "use enclosed containers or VOC recycling equipment to clean spray gun equipment." The Federal Aerospace NESHAP at 40 CFR 63.744(c) requires owners of existing spray gun cleaning operations to use an enclosed system which forces solvent through the gun, or disassembled cleaning within an enclosed vat. This is inconsistent with the practice of cleaning the guns with thinner in a metal bucket, as described by (b) (6). In addition, the Facility reported in their Permit Application submitted in April 2014 that paint gun cleaning units were used in Bldg. (b) (7) and other buildings, but a paint gun cleaning unit in Bldg. (b) (7) has not been used since April 2012 (per (b) (6)).

Bldgs. (b) (7) *and* (b) (7) *Industrial Waste Processor - 9/13-14/17*

The inspectors next visited the IWP area and observed Bldg. (b) (7) (which housed the IWP) from a distance because the IWP was operating at the time of the inspection **(See Photograph CAA 12)**. The inspectors did not observe any visible emissions at the time of the inspection. According to the Operating Permit, the IWP burns fuel oil and has a cyclone and baghouse to remove particulates from the emissions. (b) (6) reported the IWP did not operate from April 2015 to March 2016 when the baghouse was replaced.

According to (b) (6), the IWP was used to burn off trace amounts of explosive residue from metal parts **(See Photograph CAA 11 for a view of metal parts in a yard that had been processed through the IWP)**. (b) (6) explained that he examines all potentially problematic metal parts to determine if there are any observable explosive residues. If he sees any explosive residues, then the metal parts will be burned at the Strauss Ave. Open Burn Point and not in the IWP.

The inspectors visited Bldg. (b) (7) on 9/14/17 to review the records related to operation of the IWP required by the Operating Permit (these records could not be reviewed at the IWP when it was

operating). The inspectors reviewed the operating logs, maintenance plans, operator training certificates and related records back to March 2016 and did not identify any concerns with the records. Visible emissions logs were also scanned back to August 2011 and no visible emissions were recorded.

Bldg. (b) (7) Paint Booth - 9/13/17

The inspectors visited Building (b) (7) where Aerospace parts are manufactured and painted **(See Photograph CAA 13)**. The inspectors observed a paint booth in which Facility employees apply primers and topcoats with High Volume Low Pressure (HVLP) spray guns. The paint booth observed by the inspectors is connected to an exhaust fan which draws air through a filter in the back wall to control particulate emissions. The pressure differential is monitored across the filter by a manometer.

During the inspection, Bldg. (b) (7) employees had most recently undertaken a painting campaign of (b) (7)(E), in June and July 2017. The inspectors observed the coating operations log **(See Attachment CAA 14)** and interviewed (b) (6), a Facility employee in Building (b) (7) familiar with paint booth operations. Mr. Eller asked (b) (6) to describe the coatings used to paint an (b) (7)(E) part. (b) (6) explained that a green primer (MIL-PRF-23377K Type II Class N #34052 Green Primer) and flat black topcoat (MIL-PRF-85285E Type III Class W Polyurethane catalyst) are used, and referred the inspectors to their respective SDS sheets **(See Attachments CAA-15 and CAA-16)**. The inspectors observed that the coatings stored in the locker cabinet were not the same coatings noted on the coatings operation log **(See Photograph CAA 14)**. The inspectors made the following observations with respect to the requirements of sections 7.0 through 7.5 of the Facility's operating permit, which covers the Maryland metal parts coating regulations and the Federal Aerospace NESHAP:

1. The coating operations log listed 'Total VOC "as applied"' for both the green primer and flat black topcoat as 340 g/L. The inspectors noted that the VOC content listed in the SDS for the green primer was 295 g/L, and the VOC content listed in the SDS for the flat black topcoat was 0 g/L. Mr. Eller asked (b) (6) to explain this inconsistency and (b) (6) stated he did not know.

2. The dry filters on the back wall of the paint booth appeared heavily coated with black paint **(See Photograph CAA 15)**. The coatings operation log **(Attachment CAA 14)** indicated that the last time the paint booth had been used was 25 July 2017. Mr. Eller asked to see the paint booth's manometer and inquired with (b) (6) about how often the filter is changed. (b) (6) verbally stated that the filter is changed whenever the manometer shows a pressure differential of 0.2 psi or greater. The inspector observed this statement was inconsistent with Bldg. (b) (7) 's written SOP (provided by (b) (6)) that calls for a pressure differential of 1.0 psi or greater before changing filters.

3. According to (b) (6), Facility employees clean the paint spray guns by hand using acetone; an automatic gun cleaner has not been used for several years. To clean the paint spray guns, acetone can either be poured in the gun and sprayed on the booth filter or the gun parts are cleaned in a metal bucket containing acetone. If the cleaning is done with bucket of acetone, the waste solvent is allowed to evaporate.

   Naval Facilities Engineering Command and Naval Surface Warfare Center Air Conditioning Shops - 9/14/17

According to (b) (6), the ACR units on the facility were serviced by Naval Facilities Engineering Command (NAVFAC) or Naval Surface Warfare Center (NSWC) employees depending on which part of the Navy owned the ACR unit. Contractors were also used for servicing larger ACR units.

The inspectors first went to the NAVFAC AC Shop and met with (b) (6), Maintenance Supervisor and (b) (6), AC Mechanic. (b) (6) reported about four people in the Shop were certified refrigerant technicians and (b) (6) showed the inspectors his refrigerant training certification. Mr. Prescott requested the current inventory of ACR units; in particular, those that were regulated by the Title VI regulations. However, the facility did not have a current inventory of ACR units that were regulated (the current inventory was last updated in 2013, per (b) (6)).

According to (b) (6), his staff fills out Service Order Forms for servicing of regulated ACR units and he provided them for work done in 2016 and 2017, but reported that records were not available prior to 2016 **(See Attachment CAA 6 for sample copies of the Service Order Forms for NAVFAC which are the forms that are hand written)**. The available Service Order Forms for the ACR units were not always fully completed to provide some of the necessary data required such as the charge of the refrigerant in pounds in the unit and the dates the leaks were found and repaired. Furthermore, leak calculations were not conducted for when refrigerants were added to ACR units containing 50 pounds or greater of regulated refrigerants. However, these discrepancies were identified in the service records for ACR units that were not regulated either because of the type of refrigerant or that the amount of the refrigerant charge was below the 50-pound threshold. Note, no refrigerant management software was used by the NAVFAC shop for ACR unit recordkeeping. In addition, records for servicing of regulated ACR units by contractors were not maintained by NAVFAC.

Mr. Prescott requested a copy of the initial certification that the AC Shop had acquired certified refrigerant recovery or recycling devices and was complying with applicable regulatory requirements that should have been sent to EPA by 8/12/93 or when the first refrigerant recovery or recycling device was acquired. (b) (6) was able to find a copy of the certification update submitted to EPA on 3/4/11.

The inspectors later visited the NSWC AC Shop and met with (b) (6), Engineering Tech. (b) (6) reported three people in the Shop were certified refrigerant technicians and he showed

the inspectors their refrigerant training certifications. (b) (6) also showed the inspectors the latest updated inventory of ACR units they service.

(b) (6) reported regularly using Refrigerant Compliance Management (RCM) software to keep records on servicing of their ACR units (refrigerant management software was not used by the NAVFAC shop). The AC mechanics manually complete Service Order Forms and then the data from the forms is inputted into the RCM program. (b) (6) showed the inspectors the completed forms on the computer and provided a copy of a completed form to the inspectors (provided in **Attachment CAA 6**).

Mr. Prescott requested a copy of the initial certification that the AC Shop had acquired certified refrigerant recovery or recycling devices and was complying with applicable regulatory requirements that should have been sent to EPA by 8/12/93 or when the first refrigerant recovery or recycling device was acquired. (b) (6) was able to provide a copy of the certification submitted to EPA on 8/10/93.

Bldg. (b) (7) *Explosives and Propellants Mixing and Processing - 9/14/17*

The inspectors visited the Explosives and Propellants Mixing operation in Building (b) (7), escorted by (b) (6). Process equipment in Building (b) (7) was installed in 1996, so it is considered a "new source" for the purposes of compliance with the emissions requirements of the Facility's Operating Permit. Building (b) (7) was not operating during the inspection. The inspectors met with (b) (6), the Engineering Branch Head for the operation. Mr. Eller briefly interviewed (b) (6) about the explosives and propellant mixing process. Using the example of the production of BC-10 propellant (utilized by Army target drones), (b) (6) described the process as follows:

> *The operation is essentially a mixing of chemical compounds at elevated temperature and under a high vacuum to create the desired propellant product. The main ingredients – a polymer, an oxidizer, a fuel, and curatives are loaded into a* (b) (7)(E) *mixing vessel ("bowl",* ***See Photographs CAA 18 and CAA 19****).* (b) (6) *stated there is also a condenser system that can be utilized to recover hexane which is used to pre-slurry ingredients, but this has not been utilized in many years.*
>
> *During the mixing process, a high vacuum must be created in the mixing bowl. This is accomplished by a vacuum pump. There is an oil mist eliminator on the pump's exhaust.*
>
> *Over a two-day period, the ingredients are mechanically mixed in the bowl under a high vacuum, at elevated temperature F. The final product is a viscous but flowable propellant.* (b) (7)(E) .

Between batches, Facility employees clean the mixing "bowl" with a solvent. At the time of the inspection, the solvent was toluene, but (b) (6) stated the use of toluene is being phased out in favor of Bioact 145 (a general-purpose cleaner and degreaser manufactured by Petroferm). (b) (6) stated that Facility employees clean the mixing "bowl" by hand utilizing rags and

about one to two gallons of toluene, and the cleaning process takes approximately 3 hours. Volatile organic vapors (and trace amounts of residual product) emitted while cleaning the mixing "bowl" are collected by a vacuum system, equipped with bag filters to capture any trace amounts of explosive or propellant material, a HEPA pre-filter, and a carbon filter to capture VOCs **(See Photograph CAA 20)**.

The inspectors had the following observations with respect to the requirements of sections 9.0 through 9.4 of the Facility's operating permit:

1. Section 9.2 of the Operating Permit requires the Facility to reduce emissions of VOCs from process equipment by 85% or more overall. The inspectors requested documentation that the carbon filters on the solvent vapor vacuum system are adequate to meet these reduction requirements. After the inspection, (b) (6) provided information that indicated the carbon filters were adequate.

2. Section 9.3 of the Operating Permit requires the Facility to perform preventative maintenance on emission control devices associated with the process at Bldg (b) (7)(E). The emission control devices present during the inspection were: bag filters, pre-filter, and carbon filter on the solvent vapor vacuum system, condenser system (for hexane, not currently utilized), and oil mist eliminator on the vacuum pump. Mr. Eller asked (b) (6) to describe the type and frequency of preventative maintenance done on emission controls. (b) (6) replied that preventative maintenance is normally done every 40 to 50 hours of operation, and at 250 hours. Ductwork is inspected once annually. In addition, (b) (6) stated that Facility employees monitor manometers for pressure differential across filters.

3. Section 9.4 of the Operating Permit requires the Facility to have a good operating practices manual. There is a Facility-wide good operating practices manual, which includes explosives and propellant mixing operations in Building (b) (7), and a copy was provided by (b) (6).

4. Section 9.4 of the Operating Permit requires the Facility to maintain records of the dates and descriptions of preventative maintenance performed on emission controls. After the inspection, (b) (6) provided sample preventive maintenance plans and logs that indicated the required preventative maintenance had been conducted.

Records Review

Some documents were obtained in advance of the inspection from MDE personnel and numerous additional documents were obtained during and after the inspection from the Facility personnel. Observations on some of these documents related to specific buildings and areas were presented above and pertinent observations on the remaining documents are presented in this subsection. The listing of documents that were reviewed included the following:

1. MDE Operating Permit No. 24-017-0040 issued to the Facility with an effective date of 8/1/16 and an expiration date of 4/30/21.
2. MDE Operating Permit Fact Sheet.
3. MDE Operating Permit Application signed and dated on 4/4/14.
4. Letter sent to the EPA RMP Reporting Center dated 1/16/08 reporting the Facility was no longer subject to the RMP requirements.
5. FCE Inspection Report for the MDE inspection conducted on 10/15/14.
6. Annual Compliance Certification Reports for 2013 - 2016.
7. Annual Emissions Certification Reports for 2014 - 2016.
8. Semi-Annual Monitoring Reports for 2014 - 2016.
9. MDE Consent Order executed on 7/23/12 and Consent Order Termination Letter from MDE dated 4/20/16.
10. Navy gas supply emergency determination request for CTG sent to MDE on 9/20/16 and follow-up correspondence between MDE and the Navy.
11. Fuel usage spreadsheets for the CTG, boilers, and EGs for 2016 - 2017.
12. ACR unit inventories for NAVFAC (last updated in 2013) and NSWC (updated in 2017).
13. Refrigerant training certifications for the AC Technicians who service the ACR units in NAVFAC and NSWC.
14. Service Order Forms for ACR Units serviced by NAVFAC (2016 - 2017) and NSWC (2014 - 2017).
15. Acquisition of Refrigerant Recovery or Recycling Device Certifications for NSWC and NAVFAC (update) dated 8/10/93 and 3/4/11, respectively.
16. Emission Compliance Test Report for Determination of NOx and VOCs Emissions for the HRSG and CTG conducted on 1/27-28/16.
17. Various operating, paint usage, and manometer logs for paint spray booths in Bldgs. (b) (7) and (b) (7) for two years prior to the inspection date.
18. SDSs, including VOCs contents, for coatings listed in the Annual Reports for 2016 and coatings being applied at the time of the inspection.

19. Permit application to MDE for Boiler (b) (7) submitted on 4/28/17 and Permit to Construct issued by MDE on 8/22/17.

20. Initial Notification for the Part 63 Subpart JJJJJJ NESHAP for Industrial, Commercial, and Institutional Boilers at Area Sources undated, but submitted on 2/28/17, per (b) (6) .

21. Boiler Operator Training Certificates for various personnel for 2012 - 2017.

22. Semi-Annual Reports for Subpart GG Aerospace NESHAP for 2H13 - 1H17.

23. IWP operating logs, maintenance plans, IWP operator training certificates, and related records back to March 2016.

24. Visible Emissions observations logs for numerous air emissions sources for various periods, as described in this report.

25. Good Operating Practices Manual for Control of VOC Emissions dated October 2012.

The inspectors compared the known air emissions sources at the facility with the list of air emissions sources in the Facility Operating Permit, in the Facility's permit application, and in reported changes submitted to MDE, and did not identify any sources that were not included in submittals to MDE.

The inspectors reviewed the 2013 – 2016 deviations contained in the Annual Compliance Certification Reports for the Facility **(See Attachments CAA-2 and CAA-7 for the summaries of deviations in the Annual Compliance Certification Reports for these years)**. These Annual Compliance Certification Reports identified several instances of noncompliance reported in these years and the recent and ongoing significant compliance issues were investigated during this inspection and addressed by the inspectors in this report.

Initial and annual NOx performance tests and combustion analyses were required by the Operating Permit and NSPS for the CTG and HRSG. The only such tests conducted were in January 2016 and were for fuel oil and natural gas for the CTG and natural gas for the HRSG. According to (b) (6) , the Navy is working on awarding a contract to conduct the annual testing that is required for the CTG and HRSG.

According to (b) (6) , all the diesel fuel delivered for the boilers, CTG, EGs, and diesel vehicles on the Facility were Ultra Low Sulfur Diesel (ULSD) with the Sulfur concentrations in the fuel oil at or below 15 parts per million. (b) (6) showed the inspectors fuel delivery records that reported this was the type of fuel delivered.

The 2014 - 2016 Annual Emissions Certification Reports calculated and totaled the emissions of air pollutants from the emissions sources at the Facility. Table CAA 1 below summarizes the total air emissions for certain pollutants for these three years. As shown in the table, there were

significant changes in the emissions totals from 2015 to 2016. (b) (6) attributed the significant reduction in criteria pollutants during the time period to the decommissioning of the Goddard Plant (which utilized #6 fuel oil and coal) and was replaced by a decentralized natural gas system in 2015 (the NES Plant). In addition, the significant reduction in VOC emissions from 2014 to 2015 was due to an explosive manufacturing process ending in 2014 (per (b) (6)).

Table CAA 1: Summary of Annual Emissions of Key Air Pollutants (TPY)

YEAR	NOx	VOCs	SO2	PARTICULATES
2014	91.7	51.3	495	61.1
2015	66.6	5.9	280	41.8
2016	158.7	5.8	7.7	1.6

The inspectors reviewed various coatings operation logs, paint and coating usage records, SDS sheets for coatings applied, manometer logs for paint spray booths for the past three years and other related records during and after the inspection.

(b) (6) reported only two oil fired boilers (Boilers (b) (7)(E)) were subject to the 40 CFR Part 63 Subpart JJJJJJ NESHAP for Industrial, Commercial, and Institutional Boilers at Area Sources. The permit application sent to MDE for Boiler (b) (7) was submitted on 4/28/17 after the boiler was installed **(See Attachment CAA 8 for copies of the permit application and the Permit to Construct that was issued by MDE on 8/22/17)**. The permit application shows the month that construction began on the boiler was September 2014, the boiler is rated at 1.45 MMBTU/hour, and was built in 2007. However, (b) (6) reported these dates were wrong and the boiler was actually installed in March 1996 and has been operational since then. Because this boiler was only recently identified and permitted in 2017, compliance with the Subpart JJJJJJ NESHAP had not been addressed by the Facility.

After the inspection, (b) (6) provided the inspectors with a copy of the Notification of Compliance Status (NOCS) for the Subpart JJJJJJ NESHAP for Industrial, Commercial, and Institutional Boilers at Area Sources **(See Attachment CAA 9 for a copy of this NOCS via EPA CDX)**. (b) (6) reported the Facility did not submit the NOCS until 2/28/17. the Facility failed to submit the Initial NOCS and the NOCS for tune-ups for the Subpart JJJJJJ NESHAP when the regulations first required existing regulated facilities to submit these notifications which were due by 1/20/14 and 7/19/14, respectively. In addition, this notification reported the Facility was not in compliance with the initial boiler tune-up requirements in the NESHAP.

Resource Conservation and Recovery Act, Subtitle I (RCRA-I) – Underground Storage Tanks

This portion of the Inspection was conducted by EPA Inspector Mr. Justin Young.

Tank Descriptions

The Facility has one physical UST onsite (see Table RCRA-I 1) **(See Attachment RCRA-I 1)**. At the time of the Inspection, the tank was stated to be fuel oil used to heat a Thermal Catalytic incinerator system (TCIS) **(See Photograph RCRA-I 1)**. Since the tank are used for the storage of heating oil for consumptive use on the premises where stored, the tank below is excluded from federal UST regulations. EPA guidance states "Consumptive use is not intended to be limited to heating purposes only: the definition extends to any on-site use including heating, generating emergency power, and generating steam, process heat, or electricity."

Tank (b) (7) (E) (Fuel oil) has five (3) openings located above the tank **(See Photograph RCRA-I 2)**. The first opening over the tank was stated to be an interstitial brine pipe **(See Photograph RCRA-I 3)**. The second opening over the tank was a fill pipe with spill bucket **(See Photograph RCRA-I 4)**. At the time of the inspection, the spill bucket was dry. The third opening over the tank was a manway opening **(See Photograph RCRA-I 5)**. Within the manway there were two pipes leading from the tank. The pipe appeared to be double walled. There was no pump or sump sensors located in the manway sump. Located next to the tank is what appears to be a pump **(See Photograph RCRA-I 6)**. At the time of the inspection, the Facility is not sure if this pump is connected or part of the tank system.

The Facility stuck Tank (b) (7) (E), which showed there was no water (used water detection paste) and about 37 inches of product in the tank.

Table RCRA-I 1: UST and Piping Details for NSFIH

Tank #	Material Stored	Capacity (Gal.) *	Tank Construction Material*	Piping Construction Material*
Tank (b) (7) (E)	Fuel Oil	10,000	DW fiberglass	Fiberglass

***Based on tank data from facility summary and owner statements**

Dispensers

The tank is used as part of the TCIS system, so there are no dispenser units.

Tank Release Detection

Based on earlier statements, the tank is exempt from leak detection at the federal level but the Facility still conducts annual tank tightness testing. The EPA inspector obtained records for passing tank tightness testing between 2013-2015 **(See Attachment RCRA-I 2)**. The Facility stated they did not conduct a tank tightness test in 2016.

Piping Release Detection

Based on earlier statements, the tank is exempt from leak detection at the federal level.

Spill/Overfill

There was a dry spill bucket present around the fill pipe of the UST.

Cathodic Protection

The Facility stated the tank was double walled fiberglass.

Financial Responsibility

The Facility is owned by the federal government.

Closure Report

The Facility provided the EPA Inspector with the closure report of the three last UST's **(See Attachments RCRA-I 3 and RCRA-I 4)**

Tank Registration

The Facility provided the EPA Inspector with the tank registration.

Resource Conservation and Recovery Act, Subtitle C (RCRA-C) – Hazardous Waste

This portion of the inspection was conducted by EPA inspector Margaret Hernández-Vega (RCRA-C Inspector) and by EPA inspector Justin Young (Multimedia Inspection Team Leader).

Facility Regulatory Status

The Facility (RCRA ID MD4170024109) is a Large Quantity Generator and holds a Treatment, Storage and Disposal (TSD) permit for hazardous waste storage and chemical treatment, Controlled Hazardous Substances (CHS) Permit No A-223, issued by the Maryland Department of the Environment (MDE) Hazardous Waste Program. The TSD permit was first issued in 1998 and then renewed on December 6, 2006. The 2006 renewed permit expired on December 5, 2016 **(Attachment RCRA-C 1)**. According to (b) (6), the permit renewal was submitted to MDE in June 2016.

The Facility is permitted to conduct the following hazardous waste operations:

- Storage of hazardous wastes in containers within the confines of designated buildings.
- Treatment of wastewaters contaminated with explosive substances by carbon adsorption.
- Treatment of the spent carbon generated from the wastewater treatment by mixing it with coal and burning it as an auxiliary fuel in a power plant provided that the spent carbon does not show a hazardous waste characteristic.
- Treatment of small quantities of laboratory chemicals, which cannot be transported, at the generation site. The total amount of waste that may be treated under this provision shall not exceed one pound per year.

The Facility also submitted a permit application to MDE in the late 1980's for the operating of a thermal treatment unit (open-burning) for explosive hazardous waste. However, at the time of the inspection, no final permit had been granted to the Facility. Currently, the Facility is operating under interim status of Subpart P, Section 265.382: Open Burning, Waste Explosives.

The U.S. Environmental Protection Agency (U.S. EPA) Enforcement and Compliance History Online (ECHO) website shows that the Facility has been inspected annually from 2013 through 2016 by MDE, with violations or compliance issues found on 9/5/13.

Facility Description

The Facility performs two main activities that generate hazardous waste; manufacturing and research. Additionally, the Facility generates hazardous waste through other activities such as those at operations and maintenance shops, and from groundwater monitoring. The Facility's major hazardous waste streams are explosives, flammable solvents, corrosives, and metals. These hazardous wastes are stored in approximately 200 storages areas including 1-year permitted storage areas, hazardous waste accumulation areas (HWAAs) or less-than-90-day areas, and satellite accumulation areas (SAAs). The Facility generally segregates its hazardous waste into two groups; explosive and non-explosive hazardous waste. A summary of the

hazardous waste (Explosive (E) and Non-Explosive (NE)) facility area sources, by type of storage area and Facility activities (Manufacturing, Research and Others), is shown in Table RCRA-C 1 below:

Table RCRA-C 1: Facility Hazardous Waste Area Sources

Type of Storage Area	Facility Activities												Totals
	Manufacturing				*Research*				*Other*				
	E	NE	E/NE	Total	E	NE	E/NE	Total	E	NE	E/NE	Total	
<90-day	22	3		25	9	2		11		1		1	**37**
SAA	64	18	2	84	30	7	28	65		12		12	**161**
1-year	2			2						1		1	**3**
Totals	88	21	2	111	39	9	28	76		14		14	**201**

Scope of the inspection

The scope of the RCRA Hazardous Waste inspection was to verify compliance of the RCRA Hazardous Waste requirements in the Facility's hazardous waste permitted storage areas, treatments, and open burn activities; and reviewing the Facility's contingency plan, training records, and hazardous waste manifests. In order to achieve the above-mentioned scope, the following areas were visited as part of the RCRA-C inspection:

- Building (b)
- Building (b)
- (b) (7)(E)
- (b) (7)(E)
- Building (b)
- Building (b)
- Building (b)
- Building (b) (7)(E)
- Building (b)
- Building (b)
- Building (b)
- Building (b)
- Building (b) (7)

The scope of the RCRA-C inspection also included verifying the Facility's compliance with the RCRA requirements applicable to its less-than-90-day hazardous waste accumulation areas (HWAAs), and satellite accumulation areas (SAAs). The HWAAs and SAAs visited were located in Buildings (b) (7)(E).

The following documents were reviewed as part of the RCRA-C Inspection:

- Hazardous Waste Manifests
- Biennial Reports
- Weekly Inspections
- Trainings Records
- Contingency Plan
- Buildings (b) (7) Inventory

Inspection Observations

The Facility tour took place on 9/12/17 through 9/14/17. During the tour, the EPA RCRA-C Inspector was accompanied mainly by (b) (6). In addition, (b) (6), contractor, was present on 9/12/17, and during part of the day on 9/13/17.

Building (b) (7) 1-year Permitted Storage

The RCRA-C Inspector, accompanied by Facility representatives (b) (6), proceeded to Building (b) (7), designated as the permitted hazardous waste storage area for non-explosive hazardous waste. This building is comprised of eight storage bays.

The RCRA-C Inspector noticed that, according to Facility's CHS in III.A.2.a., page 16:

"In Building (b) (7), which consists of (b) (7)(E), the Permittee:

1) May store hazardous waste in (b) (7)(E);

4) May change the designated categories of wastes that may be stored in a given bay, as shown in Table III.1, if the Permittee:

i) Notifies the WAS in writing before the change is made and the WAS approves the change; and

ii) Stores wastes so that incompatible wastes do not become commingled."

However, at the time of the inspection, the RCRA-C Inspector observed that (b) (7)(E) was being used to store universal waste (lead acid batteries) and non-regulated waste. At the time of the inspection, the designated waste categories for each bay are shown in Table RCRA-C 2 below:

Table RCRA-C 2: Building (b) (7) Designated Storage Categories for Each Bay

Bay Number	Designated Category
(b) (7)(E)	

During the inspection of (b) (7) the RCRA-C Inspector observed five closed totes, each of approximately 260 gallons. Each tote had a "Non-Regulated Waste" label that included the description "Wastewater with trace Explosive/Perchlorate" and the internal profile number 170346 **(RCRA-C Photograph 1)**. The RCRA-C Inspector requested the analytical results and (b) (6) provided them on 9/14/17 **(See Attachment RCRA-C 2).** The RCRA-C Inspector also observed three blue 10-gallon closed containers; each had a "Non-Regulated Waste" label that included the description (b) (7)(E) and the internal profile number 170354 **(RCRA-C Photographs 2 and 3)**. The safety data sheet (SDS) of (b) (7)(E) was provided on 9/14/17 and is included in **Attachment RCRA-C 2.** Also, there was a closed 20-gallon cylindrical brown cardboard container that had a "Non-Regulated Waste" label that included the description (b) (7)(E) and the internal profile number 170352 **(RCRA-C Photograph 4)**. The SDS of (b) (7)(E) was also provided on 9/14/17 and is also included in **Attachment RCRA-C 2**. None of the containers in (b) (7) displayed an accumulation start date, but according to (b) (6), the Facility keeps an inventory of the building content that includes the accumulation start date of the containers. The RCRA-C Inspector observed a spill kit in the bay and a sign on the door with telephone numbers. Outside of the building, the RCRA-C Inspector observed fire extinguishers.

In (b) (7), the RCRA-C Inspector observed six containers; all the containers were closed, in good condition, and with "Hazardous Waste" labels that included the corresponding container's accumulation start date. The earliest (b) (7) container accumulation start date was 6/5/17. The RCRA-C Inspector observed a spill kit and fire sprinklers inside the bay. According to (b) (6), the bay has an impervious, non-conductive flooring.

In (b) (7) designated as an office, the RCRA-C Inspector observed empty containers, desks and scales. No hazardous waste was stored in the bay.

In (b) (7) (b) (6) indicated that the acid waste was stored on the left side, while the bases were stored on the right. On the left-side of the bay, the RCRA-C Inspector observed a 5-gallon

closed container that, per the "Hazardous Waste" label, was storing sulfuric acid. On the right side of the bay, the RCRA-C Inspector observed a 1-gallon closed container storing sodium silicate solution, as indicated in the "Hazardous Waste" label. Both containers displayed an accumulation start date, with the earliest accumulation date being 9/5/17. The RCRA-C Inspector observed an approximately 6-in crack on the floor, on the right-side of the bay, and that the floor coating was peeling off **(RCRA-C Photograph 5)**. According to (b) (6), there are project plans to recoat the flooring.

In (b) (7)(E) designated for toxic waste, the RCRA-C Inspector observed four closed 55-gallon containers with "Hazardous Waste" labels and accumulation start dates displayed on the labels. Two of the containers were storing "Fixer Waste (Silver)" and the other two "Lead Paint Chip Debris", per their labels. Furthermore, the RCRA-C Inspector observed four cracks covering from side to side (left to right) and of approximately 14-ft each **(see RCRA-C Photographs 6 to 18)**. According to Facility's CHS Section F-2a General Inspection Requirements from Appendix F:

> *"Checklists are used to inspect the building's structural integrity and conditions, operational procedures, and the potential for discharges which may threaten or result in damage to human health or the environment…The goal of highly frequent inspections is to identify and correct problems before human health or the environment is jeopardized."*

Also, according to Facility's CHS Section F-2b (1) Container Storage Requirements:

> *"Trained inspectors use a copy of the inspection form shown in Figure F-1 to assess the operation of each CHS Management Unit. Buildings are inspected for the following: Management unit integrity and security…"*

An excerpt from Figure F-1 Inspection Form for Hazardous Waste Container Storage says:

Item	*Nature of Potential Problem*
e. Floor, Storage Surface Integrity	*Cracks* *Damage to Sealant* *Dikes*

In (b) (7)(E) the RCRA-C Inspector observed six 5-gallon container with "Non-Regulated Waste" labels, and lead acid batteries labeled universal waste.

In (b) (7)(E) the RCRA-C Inspector observed fifteen containers of different sizes, ranging between 20 and 55 gallons. All the containers were closed, in good condition, with "Hazardous Waste" labels and accumulation start dates.

Outside the building, the RCRA-C Inspector observed a functioning phone, ventilation, pulldown alarms, fire extinguishers and a "Caution" sign identifying the building as a "Hazardous Waste Storage Only". The RCRA-C Inspector requested the inventory of the building as of 9/11/17

(See Attachment RCRA-C 2). The RCRA-C Inspector observed that the earliest waste accumulation date in the inventory was 3/16/17.

Building (b) (7) 1-year Permitted Storage

Building (b) (7) is used by the Facility as a 1-year permitted storage of explosive wastes. The building consists of three bays which, are used based on the explosive category. The Facility inspects the bays weekly, maintains an inventory of the waste and performs tests on the conductive floor. The RCRA-C Inspector requested a copy of the inventory, but at the time of this report, the inventory had not been provided.

In (b) (7) the RCRA-C Inspector observed a closed 55-gallon container labeled "Hazardous Waste" with an accumulation start date of 9/6/17.

In (b) (7) the RCRA-C Inspector observed a 55-gallon container and more than 30 carboard containers of different sizes. All of the containers were closed, were labeled "Hazardous Waste" and earliest accumulation start date was 3/14/17. The RCRA-C Inspector observed drains in the middle of the bay **(RCRA-C Photograph 19)**. According to (b) (6), the drains discharge into a pit 50-ft long by 18-in. wide by a few inches deep, and does not discharge to any place nor have an underground connection. Also, the RCRA-C Inspector observed that (b) (7)'s sign, which specifies the explosive limits, indicates that the bay can store up to (b) (7)(E) as indicated by Facility representatives in the open burn area) **(RCRA-C Photograph 20)**.

In (b) (7) the RCRA-C Inspector walked across the bay and noticed that, between sections A6 and A11, the floor sagged when walking on that area (**RCRA-C Photograph 21**). According to (b) (6), the bending could be a bubble between the conductive flooring. The RCRA-C Inspector inquired about whether the Facility conducts integrity testing of the building. According to (b) (6), no building integrity testing is performed, but the Facility's Public Affairs Department could have more information regarding integrity testing.

Strauss Avenue Thermal Treatment Area (SATTP), Control Room

On 9/12/17, (b) (6) directed the RCRA-C Inspector to the SATTP's control room. In the control room, (b) (6), NSWC Environmental Program Manager; (b) (6), NSWC Director of Industrial Support Division; (b) (6), NSWC Contractor EHW Coordinator; and (b) (6), NSWC Explosive Operator, were present and explained the SATTP operations. The RCRA-C Inspector inquired about the type of waste that is burned at the SATTP. The Facility personnel in the room indicated to the RCRA-C Inspector that the Facility only burns contaminated bulk materials, propellants and explosives, but cannot perform detonations, per their permit application. Contaminated materials include tapes, rags, and plastic. The RCRA-C Inspector asked if the waste is kept in the same form as it was generated or if it is modified for burning. The Facility indicated that some of the waste, because of its high concentration, it is desensitized prior to burning. The RCRA-C Inspector asked which waste and how it is desensitized. Later, on 9/13/17, (b) (6), Engineer, explained to the

RCRA-C Inspector that liquid explosives wastes, such as (b) (7)(E) that are in high concentrations, can detonate, and hence, are desensitized by diluting them. For example, (b) (6) indicated that (b) (7)(E) is mixed with stable solvents, while the (b) (7)(E) are mixed with sawdust to be desensitized. After being desensitized, the waste is still reactive and, hence, needs to be burned. These are very specific procedures based on previous incidents, as indicated by (b) (6).

The RCRA-C Inspector asked how the Facility determines if the waste could be burned. The Facility explained the following regarding the process of how the waste is determined to be burned once it is generated (**see Attachment RCRA-C 3 for process flow diagram**). The Facility uses Treatment Authorization Forms (TAFs) which, are filled by the generators of the waste to be burned. For the TAFs to be approved, they need to include the personal protective equipment (PPE), the amount, and initial treatment (if required). Once the TAFs are approved, they are transferred to the Master List. The Master List has all the waste streams approved by the Facility to be burned, including a detailed description of the waste streams, and it is used by the personnel to make decisions on what can be burned **(see Attachment RCRA-C 3 for process flow diagram and Master List)**.

The RCRA-C Inspector inquired regarding where the waste, approved to be burned, is stored by the Facility. The Facility said that the waste is kept in the less-than-90-day site known as the scrap shed. The Facility also informed the RCRA-C Inspector that the Facility conducts approximately (b) (7)(E). Burns are performed (b) (7)(E) per Facility indication. The RCRA-C Inspector asked what a complete burn means. The Facility explained that sometimes, the waste is not completely burned and, hence, the waste is reburned. The combination of initial burn and re-burn (also referred as second burn) is considered a complete burn, as indicated by the Facility. Later in the conversation, the Facility indicated that Monday afternoon is the reburn for all pans. All waste is burned twice to make sure that all reactivity is gone per the standard operating procedure (SOP). The RCRA-C Inspector requested a copy of (b) (7)(E), but at the time of this report, the SOP had not been provided.

The RCRA-C Inspector inquired about any restrictions for burning. The Facility indicated that the wind speed and direction are tracked with a weather station Davis Vintage Pro 2. These two parameters, wind speed and direction, are tracked by the permit application. The Facility also indicated that the operators fill a Pre-operational checkout sheet for each burn. The Facility also maintains Setup sheets indicating the burn site and pan, quantity, type of container, and special instructions, among others. These Setup sheets are sent to the operators the night before the burn. The next morning, the operators pick up the waste. Additionally, the Facility maintains burn sheets, and Current and Historical Lists. The Current List keeps track of the waste to be burned, while the Historical List keeps in record the wastes that were burned at the Facility. The RCRA-C Inspector requested a copy of the Current and Historical Lists, but at the time of this report, the lists had not been provided.

The RCRA-C Inspector inquired about the ash generated from the burns. The Facility indicated that the ashes and clips are managed as hazardous waste for heavy metals until they get the analytical results back. Analytical results usually come out as non-hazardous waste (hit and miss), except for ash from (b) (7) (E) per the Facility. However, on 9/13/17, the Facility indicated that they do not sample every burn nor do they perform testing between the burns. Instead, the Facility uses generator knowledge for the waste determination. The Facility has seven waste profiles: IHTS-15-08 for waste ash containing barium; IHTS-0011 for SATTP ash with cadmium; IHTS-0004 for SATTP ash with cadmium and lead; IHTS-0003 for SATTP ash with lead; IHTS-0012 for SATTP ash with selenium; IHTS-0020 for SATTP ash containing cadmium, chromium, and lead; and IHNR-0005 for SATTP ash **(Attachment RCRA-C 3)**. The RCRA-C Inspector observed that all ash waste profiles, except for waste profile IHNR-0005, classify the ash as hazardous waste. The RCRA-C Inspector inquired about the cleaning of the pans. The Facility said to the RCRA-C Inspector that they perform weekly cleanings unless they feel the pans need to be cleaned. The RCRA-C Inspector asked how much ash is generated per burn. The Facility said that Mondays, when they clean the pans, they collect approximately half a bag. Therefore, as indicated by the Facility, they generate approximately two gallons of ash per unit. Also, (b) (6) indicated that the Facility generates half of a 55-gallon container per week. This 55-gallon container is transferred to the permitted Building (b) (7) after the second burn.

The RCRA-C Inspector reviewed the daily check lists or the SATTP Pre-operational checkout sheet and observed the following (**Attachment RCRA-C 3**):

- On 2/29/16, Items status was not completed. The Facility verified and the burn was completed.
- On 7/19/16, Checklist completed (except for weather conditions) but not dated. The Facility indicated that checklist may be from a morning burn conducted on 7/19/16.
- On 12/19/16, Checklist completed (except for weather conditions) but not dated. The Facility indicated that checklist may be from 12/19/16.
- From 1/5/16 to 12/22/16, Weather conditions of 135 checklists were not recorded. Daily package of 10/26/16 showed that the weather conditions were recorded in separate sheets.

On 9/13/17, the Facility explained that, typically, propellants and explosives become waste at the end of their shelf life, and that burned waste propellants becomes hazardous waste because of lead. The Facility has two open burn points: the (b) (7)(E) and the (b) (7)(E), both of which are close to the Potomac River and to wetlands. The RCRA-C Inspector asked if the Facility has any filtration or system to capture particulates from the open burning sites. The Facility indicated that they do not have any system in the SATTP to capture particulates. The RCRA-C Inspector asked if there is a possibility that when it rains in the open burning area, contaminated runoff from the burning area can reach the river. The Facility confirmed that the contaminated runoff reaches the river. The RCRA-C Inspector inquired, on 9/12/17, about the safe distance or the minimum distance from open burning to the property of others as required by 40 CFR §265.382, which in this case is the mouth of the Mattawoman

Creek, where it joins the Potomac River. (b) (6) said to the RCRA-C Inspector that the information would be provided later since they did not have it at hand.

SATTP, (b) (7)(E)

On 9/13/17, the Facility tour continued in the SATTP, and additional Facility personnel joined a brief discussion, captured in the previous section, prior going down to the burning points. The additional Facility personnel were (b) (6), Technical Project Manager, (b) (6), New Supervisor, (b) (6), Engineer, and (b) (6), Environmental Assistant from the Safety Department. Also, Justin Young, EPA inspector, joined the SATTP discussion. After the discussion, (b) (6) accompanied the EPA Inspectors to the burning points ((b) (7)(E) and then the (b) (7)(E)).

In the (b) (7)(E) point, the RCRA-C Inspector observed a solvent carrier unit and three igniters. The RCRA-C Inspector observed that the ignited units were behind and near wetlands. Near the igniters, the RCRA-C Inspector observed burned black panels laying on the ground **(RCRA-C Photographs 22 and 23)**. According to (b) (6), the black panels were conductive flooring, but these have not been used lately. The RCRA-C Inspector also observed that the creek was just a few feet from the area and asked the Facility again, about the safe distance between the burning area and the river. The Facility said that they would provide the information later.

Later, in the conference room, the RCRA-C Inspector asked if the Facility was able to obtain the safe distance measurements. According to (b) (6), "the Facility does not have the safe distances and therefore, does not comply with the requirements."

SATTP, (b) (7)(E)

The (b) (7)(E) consists of seven open burn sites. Out of the seven, six ((b) (7)(E)) had double pans, and (b) (7) had a single pan, for a total of 13 pans. According to (b) (6), Technical Project Manager, (b) (7) is dedicated to waste that potentially will yield hazardous waste ash; mostly for lead, but also for barium, selenium and cadmium. However, previously in the Conference Room, Facility representatives indicated that the hazardous waste dedicated site was (b) (7). The RCRA-C Inspector observed that all pans were closed and locked, but none had labels. In (b) (7) near pan (b) (7), the RCRA-C Inspector observed some burned residues on the ground that, according to the Facility, would be reburned **(RCRA-C Photograph 24)**. The Facility operators opened the (b) pan and the inspectors observed residues on the bottom that will be reburned, per (b) (6) indication **(RCRA-C Photographs 25 and 26)**.

In (b) (7) the RCRA-C Inspector observed burned materials, such as wood and plastic bags, within the area where the pans were located **(RCRA-C Photograph 27)**. According to (b) (6), these residues on the ground will be collected and reburned with new waste. The RCRA-C Inspector asked when was the last time (b) (7) was used in a burn. (b) (6) indicated that on the previous Monday (9/11/17), the Facility did a burn, but did not use the pans

from (b) (7)(E). Later, after verifying the records, (b) (6) indicated that the last time in which a burn was performed in (b) (7)(E) was on 9/7/17 **(see Attachment RCRA-C 3 for Setup package)**. The RCRA-C Inspector observed in the Setup package of 9/7/17 (**Attachment RCRA-C 3**) that the first three waste streams had explosive class 1.1. Later, (b) (6) indicated to the RCRA-C Inspector that the site pan was cleaned and the burned materials were collected **(RCRA-C Photograph 28)**.

Between west of (b) (7)(E) and east of (b) (7)(E) in a radio of 6- to 10-ft, the RCRA-C Inspector observed in the ground, half a dozen of burned plastic bags that, per (b) (6), would be reburned **(RCRA-C Photographs 29 to 32)**. In (b) (7)(E) the RCRA-C Inspector observed wood shavings around the pans and an orange stain around a metal panel on the ground **(RCRA-C Photograph 33)**. In (b) (7)(E) the RCRA-C Inspector also observed wood shavings around the pans and wood pieces a few feet away from the pans **(RCRA-C Photograph 34)**.

On 9/14/17, the Facility performed a reburn on (b) (7)(E), in the (b) (7)(E). According to the Facility representative in the Control Room, the waste for the second burn consisted of wood shavings contaminated with double base propellant, and (b) (7)(E) waste. The RCRA-C Inspector requested a copy of the Setup package, but the Facility representative indicated that since it was a second burn, the Facility does not generate a Setup package but, instead, uses the same package as the first burn performed on 9/11/17. The Facility representative provided a copy of the Setup package of the 9/11/17 burn and the RCRA-C Inspector observed that the waste stream with serial number M24-17-011 had an explosive class of 1.1 **(Attachment RCRA-C 3)**. For safety reasons, the reburn could only be seen in the control room through monitors. Through the monitors, the RCRA-C Inspector observed yellow strips that, per the Facility representatives, were shredded wood. Also, the RCRA-C Inspector observed orange bags and black plastic bags **(RCRA-C Photograph 35)**. According to the Facility, the waste designated for burning comes in the plastic bags. After ignition, the RCRA-C Inspector observed a full orange plume coming out of the pan that then changed into a gray-white plume **(RCRA-C Photographs 36 and 37)**. In the SATTP Pre-operational checkout sheet, the RCRA-C Inspector observed the wind direction and velocity recorded for this second burn **(Attachment RCRA-C 3)**.

Building (b) (7)(E)

According to Section IV.N.1, page 33, of the permit A-233, the Facility may treat four explosives or reactive laboratory hazardous wastes in Buildings (b) (7)(E). However, according to the Facility, laboratory treatments were supposed to be brought from Base Realignment and Closure facilities (BRAC), but this never materialized.

On 9/13/17, the RCRA-C Inspector visited Building (b) (7)(E) to meet with (b) (6), Deputy Head, and (b) (6), Program Analyst, regarding the laboratory treatment specified on page 33 of the permit. (b) (6) explained to the RCRA-C Inspector that in 2006, the Facility proposed the treatment but never conducted it. The RCRA-C Inspector asked if any type of waste treatment is conducted in (b) (7)(E). (b) (6) explained that

neutralization of wet chemicals, elemental neutralization, and titration is conducted at Building (b) (7) as part of experiments, but that no disposal activities in their research. However, (b) (6) explained that experiments to determine characterization of mercury nitrate, to determine the best method for potential treatments, were conducted in the Building, but that no actual treatment for disposal of the waste was conducted. The RCRA-C Inspector asked when these experiments took place. (b) (6) stated that the experiments were carried out in 2013 and 2014, but didn't scale up for a greater/bigger batch. The RCRA-C Inspector asked how the waste is currently handled. (b) (6) said that the Facility is using a contractor that takes the waste.

The RCRA-C Inspector asked about the (b) (7)(E) waste specified in the permit. (b) (6) indicated that it is stored in a magazine, Building (b) (7), but that the material is used in Buildings (b) (7)(E). The RCRA-C Inspector asked how the Facility uses the waste. (b) (6) indicated that the lead azide is still bulk material that is used to create initiators. The RCRA-C Inspector asked if there are any other wastes stored in the magazine. (b) (6) said that (b) (7)(E) are stored in the magazine for reuse as well, but that the quality of the materials is tested under military standards. The RCRA-C Inspector inquired if the results of the materials indicated that they were suitable for reuse. (b) (6) said that two years ago, (b) (7) was tested and, according to the results, it is no longer reusable under military specifications. This waste has been in storage for two years. According to (b) (6), the Facility found two contractors that can potentially reuse (b) (7), but a contract has not yet been awarded. The RCRA-C Inspector requested a copy of the viability tests for (b) (7) and the inventory of the magazine; the Facility provided a copy of these that is included as **Attachment RCRA-C 4.**

Building (b) (7)

On 9/13/17, the RCRA-C Inspector, accompanied by (b) (6), went to Building (b) (7). Building (b) (7) was also listed in the permit, on page 33, for laboratory treatment. The RCRA-C Inspector asked if waste treatment is conducted in the building. (b) (6) indicated that there are no records that any treatment occurred in the building. The RCRA-C Inspector inquired about the activities performed in the building. The Facility indicated that the research by processing the materials is conducted in the building. Activities performed in the building includes, pression, loading, detonation, initiator fuse, mix, press, and weight testing. According to the Facility, no waste is generated since the materials are reused.

Shed (b) (7)

On 9/12/17, the RCRA-C Inspector proceeded to Shed (b) (7), near Building (b) (7), with (b) (6) **(RCRA-C Photograph 38)**. Outside of the shed, the RCRA-C Inspector observed a fire extinguisher and signs that read "Danger: All unauthorized personnel keep out" and a flammable sign. In the shed, (b) (6), Research Scientist from Building (b) (7), indicated that the shed is used as a less-than-90-day area for the storage of non-explosive hazardous waste. (b) (6) indicated to the RCRA-C Inspector that the waste stored in the

shed comes solely from the Building (b) (7), which generates three waste streams: aqueous, acidic, and inorganic (flammable) wastes. The RCRA-C Inspector observed three closed 5-gallon containers in good condition and labeled "Hazardous Waste," with accumulation start dates posted on the labels **(RCRA-C Photograph 39)**. The earliest accumulation start date on the containers was 8/24/17. Each container was placed on a plastic tray that was used as secondary containment. The three wastes stored in the containers were: halogenated organic liquids, acidic corrosive aqueous liquids, and flammable organic liquids. The RCRA-C Inspector observed beneath the metal grids flooring, solid materials of different colors such as white and brown **(RCRA-C Photographs 40 to 42)**. The RCRA-C Inspector asked if there has been any spill in the shed. (b) (6) said that there have been no spills since he took over the shed in 2009 and that the materials observed beneath the metal grids flooring may be from humidity. (b) (6) also indicated that the shed has never been cleaned since 2009, and that the shed was in that condition when he took over the shed. The RCRA-C Inspector asked what type of waste was stored in the shed before 2009. (b) (6) indicated that the materials were mostly the same. The RCRA-C Inspector observed a binder that specified the possible wastes stored in the shed. These possible wastes are shown in Table RCRA-C 3, below.

Table RCRA-C 3: Wastes Allowed to be Stored in Shed (b) (7)(E)

Non-Halogenated Organic Solvent Waste	Halogenated Organic	Acids
Acetone	Petroleum ether	Nitric acid
Ethyl acetate	Chloroform	Sulfuric acid
Petroleum ether	Dichloromethane	
Diethyl ether		
Methanol		

Inside the shed, the RCRA-C Inspector observed the telephone number to call in case of fire, the procedures to follow in case of a spill, a map indicating the evacuation plan, the local fire bill, and a spill kit. The RCRA-C Inspector reviewed the weekly inspections records, and none were missing. Later, (b) (6) said to the RCRA-C Inspector that the shed had been cleaned.

Building (b) (7)

Building (b) (7) is used for Research. The RCRA-C Inspector visited two of the rooms where SAAs are handled, Rooms (b) (7)(E). The RCRA-C Inspector visited the building on 9/12/17.

Room (b) (7) is an active laboratory that conducts micro-scale research and has a SAA. The RCRA-C Inspector observed five bottles; their combined volumetric capacities did not reach 55-gallons. Four of the containers were empty and the fifth container was labeled as "Flammable," but was not full **(RCRA-C Photograph 43)**. The RCRA-C Inspector asked what do they do

once a container becomes full. A Facility representative indicated that the bottles are transferred to the less-than-90-day area the same day.

Room (b) (7)(E) is also an active laboratory. The RCRA-C Inspector inquired about the type of wastes generated in the laboratory. The Facility representative indicated that the wastes generated in the laboratory consisted of halogenated waste, acetone, and ignitable waste. At the time of the inspection, the room was not accumulating any hazardous waste.

Building (b) (7)

On 9/13/17, the RCRA-C Inspector visited Building (b) (7), a less-than-90-day area for the accumulation of explosive waste. In the building, the RCRA-C Inspector observed two 30-gallon drums. The containers were closed, but the lids were not secured. The drums were labeled "Hazardous Waste" and displayed their corresponding accumulation start date on the label. The earliest accumulation start date was 8/10/17. According to (b) (6), Site Manager, the material (waste) is stored in black bags that are then placed inside the 30-gallon containers. The RCRA-C Inspector observed signs with emergency contact information. The RCRA-C Inspector also reviewed the weekly inspections for 1/9/15 until the week of the inspection, and none were missing.

Building (b) (7)(E)

In (b) (7)(E), the RCRA-C Inspector observed used wipes on top of a bench station, next to acetone and ethanol bottles **(RCRA-C Photograph 44)**. The RCRA-C Inspector did not observe any personnel working with the wipes. The Facility representative informed the RCRA-C Inspector that the wipes were used with the afore-mentioned solvents. Also, the RCRA-C Inspector observed wipes in a trash can **(RCRA-C Photograph 45)**. The RCRA-C Inspector inquired about the wipes disposal. The Facility representative indicated that the wipes only contain a small amount of solvents and, hence, are disposed of in the regular trash. However, the RCRA-C Inspector observed that SOP (b) (7)(E), said the following **(Attachment RCRA-C 5)**:

> *"B.3 The following are considered non-explosive hazardous waste when discarded. The EPA waste codes are provided in parentheses.*
>
> *a. Ethanol solutions (D002)*
>
> *b. Isopropanol solutions (D001)*
>
> *c. Methanol solutions (U154, D001)*
>
> *d. Sodium hydroxide solutions with pH greater than or equal to 12.5 (D002)*
>
> *e. Rags, paper, etc. contaminated with any of the above."*

The RCRA-C Inspector observed that the trash can also had a yellowish material and inquired about it. The Facility indicated that it was wood wax **(See Attachment RCRA-C 5 for SDS)**.

According to (b) (6), Mechanical Engineer who had been working in the Facility for a year, (b) (7)(E) has not been in use for about 5 years. In (b) (7)(E) the RCRA-C Inspector observed a hood. Inside the hood cabinets, at the bottom, the RCRA-C Inspector observed three 4-L amber bottles and a small clear-glass bottle. The amber bottles had their product label "Hexanes UN1208 H303-4," but that also had the word "waste" handwritten on the label. The small clear-glass container was labeled "Sodium silicate solution, 43%, Corrosive!" (b) (6) moved the containers to inside the hood, and the RCRA-C Inspector observed that the amber bottles were approximately 2/3 full, 3-inches, and 2-inches full, respectively, of a liquid solution and white solids. The clear-glass container was approximately 1-in. full of a white solution **(RCRA-C Photographs 46 to 49)**. According to the Facility, the (b) (7)(E) was previously used for (b) (7)(E) experiments with different particle sizes, grades, and classes. Later during the inspection, (b) (6) indicated to the RCRA-C Inspector that the Facility officially closed and cleaned the SAA **(See Attachment RCRA-C 5 for Hazardous Waste Accumulation Site Closure Form)**.

Building (b) (7)

Outside of Building (b) (7) is a shed (Building (b) (7)) designated as a less-than-90-day area for the accumulation of explosive waste. At the time of the inspection, there was no waste stored in the shed. The RCRA-C Inspector observed a spill kit inside the shed. The RCRA-C Inspector reviewed the weekly inspections from January 2016 up to the day of the Inspection, and none were missing.

Building (b) (7)

Building (b) (7) is used to refurbish and repaint rockets. The repainting of the rockets is conducted only in a paint booth. The RCRA-C Inspector inquired about the paint booth's filters. (b) (6), Explosive Operator, explained that the filters are changed once the manometer marks 0.20 in H_2O. Also, (b) (6) explained that the paint booth has plastic curtains that covers the filters and are changed daily. The RCRA-C Inspector asked about the management of the curtains. (b) (6) indicated that the curtains with excess of paint are stacked on the floor inside the hood overnight and, once dried, are disposed in the regular trash (non-hazardous) dumpster. The RCRA-C Inspector observed that the plastic curtains covered almost all the walls of the paint both **(RCRA-C Photograph 50)**. The RCRA-C Inspector inquired about the paint used in the booth. (b) (6) showed to the RCRA-C Inspector the 5-gallon paint container. The RCRA-C Inspector observed the product label on the container that read "Dyna Spec N-5120 Gray Silicone Enamel," which specified the flash point of 107°F (42°C) and displayed a flammable pictogram **(RCRA-C Photograph 51) (Attachment RCRA-C 6)**. (b) (6) also showed to the RCRA-C Inspector the SOP that specifies the drying of the filters and curtains before their disposal in the regular trash. The RCRA-C Inspector observed that SOP (b) (7)(E), and Sections F and J said that Buildings (b) (7)(E) have the same practice of drying the filters and curtains before their disposal in the regular

trash. The RCRA-C Inspector requested copies of the afore-mentioned pages and sections, but at the time of this report, they have not been provided.

Building (b) (7)

On 9/14/17, the RCRA-C Inspector visited Building (b) (7), designated as a less-than-90-day area for the accumulation of explosive waste. The RCRA-C Inspector observed a sign that read (b) (7)(E) The RCRA-C Inspector observed forty-nine 30-gallon containers; all closed, labeled "Hazardous Waste," and with their corresponding accumulation start date displayed on the label. The earliest accumulation start date for the containers was 9/7/17. (b) (6), custodian of the shed, provided to the RCRA-C Inspector the weekly inspection records. The RCRA-C Inspector observed that the following dates were missing: May 2015, and 1st, 2nd and 4th weeks of July 2015.

Building (b) (7)

Building (or shed) (b) (7) is a designated less-than-90-day accumulation area for non-explosive hazardous waste. In the shed, the RCRA-C Inspector observed twelve containers; seven of which did not have hazardous waste labels **(RCRA-C Photograph 52)**. The RCRA-C Inspector inquired about the seven containers without hazardous waste labels. (b) (6), Supervisor Technician and custodian of the shed, said that he had transferred the containers from Building (b) to the shed the previous month because they were expired chemicals that were flammable. (b) (6) explained that he transferred the waste containers to the shed because they were on hold to verify if were hazardous waste. Five of the seven containers consisted of ¼-gallon metal cans with product labels indicating that they contained DN Type 2 class B-1/2 Sealing Compound, barcode with number 8030-00-080-1549, with expiration date 6/1/17, and a volatile organic compound (VOC) concentration of 11.82gm/Liter. All five of these containers were full. One of the seven containers consisted of a 32-oz metal can with product label indicating that it contained Scotch-Weld™ Epoxy Adhesive 1838 B/A Green (Part A) **(RCRA-C Photograph 53)**. This 32-oz container was approximately ¼-full and had a SDS number of 694. The last of the seven containers consisted of a 1-pint metal can with a product label indicating that it contained Catalyst 15 Black that had an expiration date of 7/8/17. This 1-pint container was approximately ¼-full and had a SDS number of 1059.

Inside the shed, the RCRA-C Inspector observed a fire extinguisher and a spill kit. Outside the shed, the RCRA-C Inspector observed a sign indicating "Danger Unauthorized Personnel;" however, there was no sign indicating that it was a less-than-90-day hazardous waste accumulation area **(RCRA-C Photograph 54)**. The RCRA-C Inspector asked (b) (6) regarding the last three years of weekly inspections. (b) (6) indicated that, at least since he has been the custodian, no inspections have been conducted of the shed. The RCRA-C Inspector inquired about how long (b) (6) has been the custodian of the shed, but this information was not provided.

Building [redacted]

Building [redacted] is listed on the permitted as permitted hazardous waste storage area; mainly for the storage of polychlorinated biphenyl (PCB) wastes. However, at the end of the permit, after page 36, there is a page that reads "*Building* [redacted] *has been closed in accordance with the terms of COMAR 26.13.05.07 and this storage building is no longer subject to the terms of this permit*."

On 9/14/17, the RCRA-C Inspector and [redacted] went to Building [redacted]. According to [redacted], Building 1440 is now used as a less-than-90-day hazardous waste accumulation area. Inside the building, the RCRA-C Inspector observed a 55-gallon container with a non-hazardous waste label indicating that it contained [redacted] Purge Water investigation derived material that was pending characterization. The label depicted the dates 6/12/17-6/15/17. The RCRA-C Inspector inquired about the container, and [redacted] provided the results of the analysis **(See Attachment RCRA-C 7)**. Additionally, the RCRA-C Inspector observed three 55-gallon containers with labels that read "This container on hold pending analysis. Do not tamper with container. Authorized personnel only." Of the three 55-gallon containers, two were storing Irrigation Well Metal Filters, according to their labels **(RCRA-C Photographs 55 and 56)**. According to [redacted], these two containers were not storing waste. The third 55-gallon container was storing [redacted]-Purge Water, according to the label, and was dated 3/30/17 **(RCRA-C Photographs 57 and 58)**. The RCRA-C Inspector inquired about the status of the waste and analysis. [redacted] said that the analysis showed that this is non-hazardous waste and provided a copy of the analysis **(See Attachment RCRA-C 7.)**

Outside the building, the RCRA-C Inspector observed a sign that read "Danger Unauthorized Personnel Keep Out." There was no sign indicating that it was a less-than-90-day hazardous waste accumulation area.

The RCRA-C Inspector inquired about alarms or radios. [redacted] indicated that all personnel carry with them certified phones. The RCRA-C Inspector reviewed the weekly inspections from 11/2/15 until the day of the Inspection; all the inspections reviewed were signed and none were missing.

Building [redacted]

This building is associated with the wastewater treatment for the nitration plant. On 9/13/17, the EPA Inspector, Justin Young, met with [redacted], who is the area supervisor at Building [redacted]. There is a catch basin at this building that collects excess waste nitrate esters, which was stated to be collected into a 24-gallon drum. Inside the drum, the nitrate esters waste is double bagged. Before the double-bag is taped to be sent for thermal treatment onsite, 25 pounds of sawdust and 12 pounds of Triacetin (TA) are added to the waste nitrate esters. The Facility calls these waste drums slum cans. The slum cans were stated to be collected in one of the many slum houses around the Facility. [redacted] stated that the slum waste is reactive and that it is burned at the thermal treatment onsite.

Building [redacted] Catch Basin

On 9/13/17, the EPA Inspector, Mr. Young, went to Building [redacted] to observe a catch basin located near this building. The area is a large concrete covered catch basin for acid and process wastewater. The catch basin was stated to be split into two sections ([redacted]), with a wall to separate each section. The Facility stated they have a contract to handle the wastewater. Mr. Young, the EPA Inspector, asked if the Facility has a written waste determination on the wastewater. The Facility stated that they conduct a test sample only when they change a contract.

Building [redacted]

On 9/13/17, the EPA Inspector, Mr. Young, went to Building [redacted]. This area is the [redacted]. The area has been inactive for approximately the last two years, but the Facility stated that they are planning on restarting the process. The Facility did state they did generate wastewater that would go into the onsite WWTP. There was an IPA waste tank that was part of the process, which was stated to contain [redacted] and IPA, which would be burned at the thermal treatment point onsite.

Building [redacted]

On 9/14/17, the EPA Inspector, Mr. Young, went to Building [redacted], which is designated as a less-than-90-day hazardous waste accumulation area. The building is a large storage locker/pad. The site was stated to be temporarily closed per the sign on the outside of the door **(RCRA-C Photograph 59)**. Within bay 2 of the storage locker, there was a black 55-gallon drum that the words "hazardous waste toluene" written on the label **(See RCRA-C Photograph 60)**. There was no yellow "Hazardous Waste" sticker observed on the drum. The inspector tapped the drum, which was observed to be about ½ full. The inspector also observed the one and only date on the container to be 6/25/09. The Facility was taking pictures and the camera died, so no pictures were taken of the date.

Records Review

Hazardous Waste Manifests

The RCRA-C Inspector randomly chose 3-4 months from 2015, 2016 and 2017 for review. For 2015, the RCRA-C Inspector chose the months of May, September and October. For 2016, the RCRA-C Inspector review the manifests of April, October and December. Finally, for 2017, the RCRA-C Inspector reviewed January, March, June and September. All manifests reviewed were dated and signed by the designated facility within 30 days, except the last shipment sent on 9/11/17 **(See Attachment RCRA-C 8)**.

Biennial Reports (BR)

The Facility submitted the 2015 biennial report on 2/25/16, by (b) (6), Installation Environmental Programs Director **(See Attachment RCRA-C 9)**. The Facility identified itself as a TSD facility and/or generator of >1,000 kg of hazardous waste, > 1 kg of acute hazardous waste. The activities identified in the BR were:

- Generator of Hazardous Waste: LQG
- Treater, Storer, or Disposer of Hazardous Waste (at your site)
- Receives Hazardous Waste from Off-site

The Facility submitted the 2013 BR on 2/27/14, by (b) (6). The Facility reported the same activities as in the 2015 BR.

Weekly Inspections

The RCRA-C Inspector reviewed the weekly inspections records of the less-than-90-day areas during the Facility tour and these were discussed in their corresponding Inspection Observation's section **(See Attachment RCRA-C 10)**.

Training Records

The RCRA-C Inspector reviewed the training records for (b) (6). (b) (6) was trained on 8/23/17, 8/16/16 and 4/20/15. (b) (6) was trained on 2016, 2015 and 2014. The RCRA-C Inspector observed that there were no training records for 2017. (b) (6) indicated that (b) (6) typically takes training in December. (b) (6) was trained12/19/16, 12/16/15, 1/20/15 and 2/28/14. (b) (6) provided a list of all Naval Surface Warfare Center employees who were trained **(See Attachment RCRA-C 11)**. According to (b) (6), NSWC trains every employee working with hazardous materials.

Contingency Plan

The RCRA-C Inspector inquired regarding the Contingency Plan (the Plan). (b) (6) indicated that the Plan is included in the permit **(Attachment RCRA-C 1)** and covers the LQG activities. However, the RCRA-C Inspector observed that the Permit Attachment 4, Section G-1b does not include any hazardous waste in the less-than-90-day areas:

> *"The contingency plan described herein is for NSFIH and specifically for its four permitted storage facilities (Buildings (b) (7)(E)), pinkwater treatment (Building (b) (7)), chemical treatment (Buildings (b) (7)(E)), and carbon treatment at powerhouse (Building (b) (7)).*"

The RCRA-C Inspector observed in Table G-1, page G-7, a personnel notification list with the work telephone numbers ad home telephone numbers but, not their addresses. In Table G-2, pages G-8 and 9, the plan listed the emergency equipment and locations. In Table G-3, page G-

10, the Facility listed the emergency contacts organizations and agencies with their telephone numbers. Also, the plan included an evacuation plan, section G-8 in page G-49.

Clean Water Act

The EPA Inspector on this portion of this Inspection was Garth Connor, from OECEJ's Philadelphia Office, with assistance from Ms. Shailaja Polasi, a Water inspector from the Maryland Department of the Environment (MDE).

National Pollutant Discharge Elimination System (NPDES) Water Pollution Control Permit - Wastewater Treatment Plant and Industrial Point Sources

The Facility is a major wastewater discharger and currently has two separate NPDES permits. The facility's wastewater treatment plant has permit number MD0020855, and that permit was issued on March 1, 2014 and expires on February 28, 2019 **(Attachment CWA 1: Wastewater Treatment Plant Permit #1**). The second NPDES number is MD0003158, and is for all their other industrial outfalls and sampling locations (**Attachment CWA 2: Water Permit #2**). It was issued on September 1, 2012, and expired on August 31, 2017. This second permit had a significant amendment issued, which is called Amendment A, on January 1, 2017 and that amendment changed many of the outfall sampling locations (**Attachment CWA 3: Amendment A**). This Amendment is the document that is currently being followed by facility staff, in terms of where to sample, until the actual permit is revised and then reissued at some future date.

As a result of Amendment A, the actual discharge pipes from many of the onsite buildings are now being directly sampled rather than sampling a small tributary that flows near the discharge pipe that is located outside of that building. One of the major difficulties for the facility, with respect to this permit amendment, is that it has become difficult to obtain a sample while wastewater is flowing intermittently from a small outfall pipe. Flow from many of these pipes is both sporadic and unpredictable, so it's now much more difficult to collect appropriate samples on a weekly or monthly basis. The facility has had several non-reporting violations since the amendment, simply because they were unable to obtain any type of a water sample from some of the new discharge locations. Prior to the amendment, staff sampled the small tributaries nearby a discharge pipe which always had sufficient flow and always could be collected in sufficient quantities. A second complication regarding this NPDES permit is that the Total Maximum Daily Load (TMDL) limit for the facility took effect 36 months after the permit issuance in September 2012. Based on this schedule within the permit, the facility had a TMDL limit starting in September 2015, and facility staff had to begin to report several parameters such as total nitrogen and total phosphorus in pounds/day, on both a monthly and yearly basis.

The wastewater treatment plant, covered under the first permit, had a major upgrade in 2011 in order to reduce the total pounds of phosphorus and nitrogen levels being discharged to the nearby Chesapeake Bay. The total flow is approximately 500,000 gallons per day from the wastewater treatment plant. Both of the Facility's permits were issued to comply with the Chesapeake Bay TMDL for Nitrogen, Phosphorus and Sediment which was originally issued on December 29, 2010. The wastewater treatment plant currently has sequencing batch reactors and denitrification filters in operation so that it is appropriately configured to be an Enhanced

Nutrient Removal (ENR) system. As part of that NPDES permit, the Facility must report its year-to-date total nitrogen and total phosphorus for the entire year on its December Discharge Monitoring Report.

The wastewater treatment plant uses ultraviolet radiation for disinfection and no longer uses chlorine at all for disinfection. The EPA Water Inspector walked through the entire wastewater treatment plant from beginning to end, and saw the various components of it in sequential order. The wastewater treatment plant had had a large branch from a nearby tree fall on it during a heavy thunderstorm several days prior to the inspection (**See CWA Photograph 1**). Parts of that tree branch were still being removed from one side of the wastewater treatment plant at the time of the inspection, but it did not impact the normal functioning of the wastewater system. The wastewater treatment plant appeared to be properly staffed, and was operating in appropriate fashion on the day of the EPA inspection.

National Pollutant Discharge Elimination System (NPDES) Water Pollution Control Permit – Industrial Storm Water Discharges

Many of the industrial operations in the hundreds of buildings within the Facility could potentially contribute to pollution of storm water running off the property in different directions. The facility is also located very close to several large surface water bodies, including both the Potomac River and the Mattawoman Creek.

The Facility's storm water requirements are described in the back segment (page 45-47) of the facility's NPDES permit. For example, page 45 of the permit describes the requirements for the facility to produce and implement a Storm Water Pollution Prevention Plan (SWPPP). According to (b) (6), their SWPPP is amended and updated each December by facility staff to make certain that it is current and up-to-date in terms of the potential pollution sources and different operational areas. For example, when the power plant was shut down in 2015, the SWPPP had to be updated later that year to incorporate those changes and closures. The most recent version of the SWPPP, which the EPA Inspector examined, was signed by (b) (6) on January 10, 2017. This plan is used by staff to identify potential pollution sources onsite which could impact or contribute to contaminated storm water discharges to nearby streams. Appropriate staff also receive online storm water training using a system called ECATTS, which stands for Environmental Comprehensive Assessment Training & Tracking System. There's two separate training modules on storm water, a basic and an advanced module. The facility also has an annual comprehensive storm water inspection requirement in their permit, and that inspection is also done by staff each December. (b) (6) is the facility's storm water specialist, and he accompanied the inspectors on this segment of the inspection. (b) (6) was well aware of the facility's storm water requirements, and is also involved in the annual updating of the facility's SWPPP each December.

The Water inspectors began a tour of the Facility to analyze and evaluate the Facility's storm water program. The Water inspectors noticed a significant water leak from a broken pipe outside of Building (b) (7), in the first group of buildings that they visited **(See CWA Photograph 2).**

This water leaking from a pipe was apparently portable water according to facility staff. It was not leaking industrial wastewater of any kind, and was flowing into a nearby gully. Facility staff were not certain of the duration or total volume of this water leak. Then the inspectors saw numerous steam sources venting excess steam under pressure into nearby steam pits or cooling wells **(See CWA Photograph 3)**. These sources of steam were described by facility staff as just open valves venting excess steam under high pressure in metal pipes. The Water inspectors walked over to the former power plant and examined the old coal pile and the nearby coal pond **(See CWA Photograph 4)**. The inspectors also visited the burn pit area although an open burn was not scheduled or performed on the day of the water inspector's visit. (b) (6) , one of the facility's staff at the open burning area, explained that it was too cloudy and that there must be at least 1000 feet of ceiling to have a burn. He also explained that approximately 3,000 pounds of explosives are burned in a typical open burning event, and about 200,000 pounds of explosives are estimated to be burned by facility staff in a typical calendar year. Several photos (**See CWA Photographs 5 and 6**) show dark burn residue from the open burning, that noticeably darkened the ground. The EPA Inspector was concerned that contaminants from this burn residue could easily run into nearby surface waters via storm water runoff during a significant storm event. There didn't appear to be any storm water containment of any kind in this part of the facility. The burn pit area is located on a narrow strip of land, a thin peninsula, and it is immediately adjacent to surface waters (Potomac River & Mattawoman Creek) on all sides. Several bald eagles were spotted flying in the air immediately above the burn site during the inspection of this area. The open burning site does not currently have any storm water or surface water sampling requirements to evaluate if there is any impact from the burn area to any of the nearby waterbodies. The EPA Inspector mentioned to the facility's staff that sampling storm water in this area during an extreme storm event should be a future addition to the SWPPP.

Clean Water Act - Spill Prevention Control and Countermeasures (SPCC) Plan

The EPA Inspector on this segment of the Inspection was Garth Connor, from OECEJ's Philadelphia Office.

This section addresses compliance with the Spill Prevention, Control and Countermeasures (SPCC) regulations and the preparation of a SPCC Plan. No permits are required or issued under the federal SPCC regulations. The CWA and the EPA's Oil Pollution Prevention Regulations require the preparation, certification and implementation of a SPCC Plan at applicable facilities.

These regulations apply to any facility engaged in drilling, producing, gathering, storing, processing, refining, transferring or consuming oil and oil products, providing that all the following conditions are met: the facility is non-transportation related, the aboveground storage capacity of a single container is in excess of 660 gallons, or the aggregate aboveground storage capacity is greater than 1,320 gallons, or the total underground capacity is greater than 42,000 gallons, and due to the facility location, oil spilled at the facility could reasonably be expected to reach waters of the United States.

The Facility stores oil (as defined by EPA) in various forms, primarily fuel. According to the Facility's SPCC Plan the aggregate oil storage capacity at the time of this inspection was in excess of 413,000 gallons, far exceeding the 1,320-gallon aboveground threshold. The Facility is owned and operated by the United States Navy. The Facility is located in Indian Head, Charles County, Maryland between the Potomac River and the Mattawoman Creek, so it is in close proximity to several navigable waters.

The EPA Inspector reviewed two different SPCC plans that had been prepared by the facility over the past four years. First, there was a draft SPCC plan from December 1, 2015, that was not signed or stamped by a professional engineer and it also didn't receive any management approval from Indian Head management. This draft SPCC plan was written after the coal-fired power plant was shut down in September 2015 and it described the facility's total oil-tank capacity as 410,725 gallons. When the coal-fired power plant was still operating in 2014, the facility's oil storage capacity was approximately 1,410,000 gallons.

Two large 500,000-gallon Fuel oil (b (bunker fuel) tanks were removed when the power plant was converted to a gas-fired system. The previous version of the SPCC plan was from January 2014, and it was stamped and certified by (b) (6), PE on March 9, 2013. The 2014 SPCC plan, also had management approval on November 12, 2013, so it was a legitimate SPCC plan. It listed the two large bunker fuel tanks at the power plant as being in operation, so the total oil-storage tank capacity at the time it was written was over 1,410,000 gallons. Before the coal-plant shutdown, the facility was required to have a Facility Response Plan Facility since the facility's oil-storage capacity was well over 1,000,000 gallons. (b) (6) informed Mr. Connor that they were going to redo or amend their SPCC plan over again in 2018, and get that new 2018 plan stamped by a Professional Engineer and approved by management in order for the 2018 plan to become the new officially certified SPCC plan.

Closeout Conference

The EPA Inspectors relayed their concerns to the Facility during a closeout conference that included the Facility command along with environmental personnel and lawyers on September 15, 2017, via a PowerPoint slideshow. It was stated at that time any outstanding or additional information, which the EPA Inspectors were unable to obtain during the Inspection, could be sent to the team lead inspector. An official notification letter from EPA was sent to the Facility detailing the observations and concerns. The letter also included information regarding the outstanding documents and photograph designations the Facility provided subsequent to the inspection.